

### Remarks

The following is in response to the Office Action dated October , 2003.

Claim 9 was rejected under 35 U.S.C. 102(b) as being anticipated by Katayanagi et al. U.S. patent 5,732,390. Claims 1-4, 8, 10-11 and 15-19 were rejected under 35 U.S.C. 103(a) as being obvious over Katayanagi; and claims 5-7, 12-14 and 20-22 were rejected as being obvious over the combination of Katayanagi and Gerson publication.

Katayanagi discloses a speech signal transmitting and receiving apparatus that utilizes a noise domain detection circuit 4 that detects the noise domain, and more particular in finding whether the noise being detected is a voiced sound or just plain noise. The detection of the noise domain is done in frames, for if a frame were to be found to be a noise frame, then it becomes possible to detect the noise level. The thus detected noise domain is then fed to a noise level detection circuit 5 which would detect the voice sound level or the speech level of the speaking party. To detect the noise domain, the noise domain detection circuit 4 utilizes a number of parameters which include the frame power, the reflection coefficients, linear prediction coefficients, codebook, pitch and the codebook gain from a VSELP (vector sum excited linear prediction) encoder 3. (See column 3, lines 40-47; column 4, lines 36-40 and 46-49; column 6, lines 6-20) Thus, in the Katayanagi system, the focus of the noise domain detection circuit 4 is to separate the environmental noise from the speaker voice so that the level of the voice signal may be detected by noise level detection circuit 5.

Katayanagi therefore does not disclose or suggest the claimed "estimation means" of the instant invention in which, as for example in claim 1, estimates, renews and outputs an estimated environmental noise level that, when the being sampled level increases as compared to a previously sampled level, could gradually vary the estimated environmental noise level from a previously estimated noise level. The noise

domain detection circuit 4, or the noise detection circuit 5, of Katayanagi does not perform the function as claimed.

In particular, with respect to rejection of claims, the examiner states that the claimed "variation detection means" (in the independent claims) is taught in column 9, lines 1-36 of Katayanagi. Yet the purpose of the framed detection by the noise domain detection circuit 4 is to ascertain whether the noise received is that of a voice signal. Indeed, column 9, lines 21-30 state: "The reason is that, if there is an acute change in the frame power  $R_0$  between the current frame and the frame previous to the directly previous frame, the current frame is set as being the voice sound frame. That is, if the result at the step S15 is YES, that is if there is an acute change in the frame power  $R_0$  between the current frame and the frame previous to the frame directly previous to the current frame, control proceeds to step S16, in order to set the noise flag to 0, and the current frame as set as being the voice sound frame."

To support his argument that the noise level detection circuit 5 of Katayanagi is an estimation means, the examiner relies on the disclosure in column 11, line 56 to column 12, line 46. Yet the referenced disclosure has to do with the controlling of the received sound volume which is dependent on the user having manually adjusted the sound volume knob to a given stage representing a given level. Indeed, the flow chart of Fig. 6 as discussed by the disclosure of column 11, line 56 to column 12, line 46, starts off with step S21 to check whether the volume has been changed by the user, and whether there has been an increase in volume by the user in step S22. Thus, the operation as outlined in Fig. 6 integrates the volume adjustment by the user and an automatic sound volume adjustment. (See column 12, lines 43-46) Thus, the disclosure referencing Fig. 6 only illustrates the flow of controlling the voice sound volume.

In sum, it is respectfully submitted therefore that Katayanagi does not disclose, or suggest the claimed estimation means of the instant invention.

Given that the limitations of "having first storing means", "having second storing means", and "difference between the presently estimated environmental noise level and the previously estimated environmental noise level is lower than a predetermined value" are redundant insofar as for example amended claim 1 includes the specific feature that "when the variation detection means detects that the presently sampled level increases from the previously sampled level, the estimation means gradually varies the estimated environmental noise level from a previously estimated environmental noise level", those limitations have been deleted from the pending independent claims.

In addition, the gradual variation process includes a concrete example of "renewing the previous estimated environmental noise level by adding a predetermined value thereto so as to output the renewed environmental noise as the estimated environmental noise level". Therefore, new claims 23 and 24 have been added to cover this feature.

In view of the foregoing, the examiner is respectfully requested to reconsider the application and pass the same to issue at an early date.

Respectfully submitted,



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